J. Malac. Soc. Aust. 4 (1-2): 81-83. 1 July 1978.

ON THE TAXONOMIC STATUS OF THE GENERA *ACUTOPLAX* COTTON & WEEDING, 1939 AND *EUDOXOPLAX* IREDALE & MAY, 1916 (MOLLUSCA: POLYPLACOPHORA)

R.A. VAN BELLE

Nijverheidsstraat, 22, 2700 Sint-Niklaas, Belgium.

SUMMARY

The genera *Acutoplax* Cotton & Weeding, 1939 and *Eudoxoplax* Iredale & May, 1916, both recently considered as synonyms of *Callochiton* Gray, 1847, are reviewed. The taxonomic limits of *Acutoplax* are changed, and it is concluded that *Acutoplax* and *Eudoxoplax* are valid subgenera of respectively *Callochiton* Gray, 1847 and *Eudoxochiton* Shuttleworth, 1853.

INTRODUCTION

The study of a good specimen of *Callochiton mayi* Torr, 1912, graciously given to me by Mr. J.R. Penprase, has revealed a peculiar feature which, upon further investigation in the collection of the Tasmanian Museum and in his private collection by Mr. Penprase, has proved to be of special taxonomic interest. Advantage is taken of this note to reconsider the status of *Eudoxoplax* Iredale & May, 1916.

TAXONOMY

Acutoplax Cotton & Weeding, 1939

The genus *Acutoplax* was created with the following diagnosis: "Shell small to medium, elongate oval, elevated and carinated. Sculptured with longitudinal sulci on the pleural areas. Girdle of packed spicules. Well developed insertion plates with grooved teeth. End and median valves multi-slit. Genotype: *Callochiton mayi* Torr, 1912" (Cotton & Weeding, 1939: 189).

If this diagnosis is compared with the original description of the genus *Callochiton:* "The valves keeled, the hinder valve entire; the plates of insertion rather short, thick, of the terminal valves divided into many, and of the central valves into four bifid lobes. Margin with imbricate scales. ♀ Margin with lanceolate, elongate, erect, closely-pressed scales. *Chiton laevis,* Montagu" (Gray, 1847: 126), it seems logical that *Acutoplax* should be considered a synonym of *Callochiton.* Especially if one knows that the type-species of the genus *Callochiton, Chiton laevis* Montagu, 1803 (pre-occupied by *Chiton laevis* Pennant, 1777 = *Tonicella rubra* (Linnaeus, 1767)) = *Chiton achatinus* Brown, 1827 exists in two forms: the typical Atlantic Ocean form without any sulci on the pleural areas, and the Mediterranean Sea form *doriae* Capellini, 1859, with up to five longitudinal sulci on the pleural areas.

In the description of *Callochiton mayi,* Torr (1912: 1) says about the girdle: "Densely covered with microscopically diamond-shaped scales, which are only the points of long flattened, closely

appressed corneous bodies. This helps to fix the genus of this shell". Indeed, this description fits the girdle of *Callochiton achatinus* extremely well, and not only of the type-species, but of all other *Callochiton* species. Since then, as far as I know, no further study has been made of the rare North Tasmanian species *Callochiton mayi* Torr, 1912.

A.G. Smith (1960: I 58) accepts only two valid genera in the family *Callochitonidae: Callochiton* Gray, 1847 and *Eudoxochiton* Shuttleworth, 1853. All other related taxa are considered synonyms of *Callochiton*. They are: *Clathropleura* Tiberi, 1877 (partim); *Trachyradsia* Carpenter in Dall, 1878; *Collochiton* Sars, 1878 (nom. null.); *Stereochiton* Carpenter in Dall, 1882; *Icoplax* Thiele, 1893; *Eudoxoplax* Iredale & May, 1916; *Paricoplax, Quaestiplax* Iredale & Hull, 1929; *Acutoplax* Cotton & Weeding, 1939 and *Ocellochiton* Ashby, 1939.

In April 1976, my good Tasmanian friend Mr. J.R. Penprase sent me a specimen of *Callochiton mayi* Torr, 1912. He had collected the specimen on March 22nd 1976 at the western end of Coles Beach, West Devonport, north coast of Tasmania, at the bottom of a stone lightly embedded in sand in hipdeep water at low tide. The specimen was preserved in an alcohol-solution.

While studying the specimen, I noticed that the girdle showed the typical covering of any *Callochiton*, but besides that it had many bunches of 2-4 very long and slender corneous processes standing quite erect at about 1/3 from the outside border of the girdle.

This very peculiar feature incited me to check the literature again, but nowhere could I find any notice of it. At my request Mr. Penprase examined the *Callochiton mayi* specimens in his own collection and those in the collection of the Tasmanian Museum for this feature. In a letter dated 27 March 1977, he let me know that all the spirit specimens he had studied had the corneous processes on the girdle. About the holotype (Tasmanian Museum Reg. No. E177a/7518a) he wrote: "The Type specimen is dry, glued to cardboard, about half the girdle folded under and not accessible. No corneous processes can be seen under the microscope (100 x). In view of the rather battered state of the Type it could well have had such a fragile feature inadvertently wiped off before Torr got around to writing the description".

From all this, I think we may safely conclude that *Callochiton mayi* should no longer be considered as belonging to *Callochiton s.s.* The characteristics of the girdle are so different that a subgeneric distinction must be made. A new subgeneric name might be proposed, but I think another solution is possible. Article 61 of the International Code of Zoological Nomenclature (1964: 59) about the relationship of the type to the taxon, says: "The "type" affords the standard of reference that determines the application of a scientific name. Nucleus of a taxon and foundation of its name, the type is objective and does not change, whereas the limits of the taxon are subjective and liable to change . . .". As *Callochiton mayi* is the type of the genus *Acutoplax* Cotton & Weeding by original designation, I propose to maintain that name, with subgeneric value, and to emend the diagnosis in the following sense: Girdle of packed spicules and interspersed bunches of several long corneous processes.

Other species that have been assigned to the genus *Acutoplax* are: *Callochiton rufus* Ashby, 1900; *Callochiton klemi* Ashby, 1926 and *Acutoplax cottoni* Weeding, 1940. All these species have the characteristic *Callochiton* girdle, but none have the supplementary bunches of corneous processes, so they all belong to the genus *Callochiton s.s.*

It seems probable that the subgenus *Acutoplax* Cotton & Weeding, 1939 consists of one species only: *Callochiton (Acutoplax) mayi* Torr, 1912.

Eudoxoplax Iredale & May, 1916

The genus *Eudoxoplax* was proposed for *Chiton inornatus* Tenison-Woods, 1881. From the original diagnosis I quote: "Recent acquisitions of many specimens show the Tasmanian shells to reach a large size, and to differ appreciably from *Callochiton* and approach very closely to *Eudoxochiton*. It differs from the latter in the very wide leathery girdle with very short thin curved few and minute little hairs, and may later be regarded as a subgenus of *Eudoxochiton*" (Iredale & May, 1916: 99).

Indeed, *Chiton inornatus* has very little in common with the type or other members of the genus *Callochiton*. It leans very close to the genus *Eudoxochiton* Shuttleworth, 1853, type-species *Acanthopleura nobilis* Gray, 1843. Only the girdle-elements differ markedly. The "very short thin curved few and minute little hairs" of *Chiton inornatus*, are replaced in *Eudoxochiton* by many

scattered rigid spinelets. Why *Eudoxoplax* has been synonymized with *Callochiton* rather than with *Eudoxochiton* is an open question. As Iredale & May suggested, *Eudoxoplax* should be considered a subgenus of *Eudoxochiton*, the differences of the girdle-elements having too little value to make a generic distinction.

As a result of the above observations, the subfamily *Callochitoninae* should be divided as follows:

Subfamily *Callochitoninae*

Genus *Callochiton* Gray, 1847 (Type: *C. achatinus* (Brown, 1827))

Subgenus *Callochiton s.s.*

Subgenus *Acutoplax* Cotton & Weeding, 1939 (Type: *C. (A.) mayi* Torr, 1912)

Genus *Eudoxochiton* Shuttleworth, 1853 (Type: *E. nobilis* (Gray, 1843))

Subgenus *Eudoxochiton s.s.*

Subgenus *Eudoxoplax* Iredale & May, 1916 (Type: *E. (E.) inornatus* (Tenison-Woods, 1881))

ACKNOWLEDGEMENTS

I wish to thank Mr. J.R. Penprase for the preserved specimen of *Callochiton mayi* and for examining other material of this species in the Tasmanian Museum and his private collection, and the staff of the Tasmanian Museum for allowing him to do so on my behalf.

REFERENCES

COTTON, B.C. & B.J. WEEDING, 1939 Flindersian Loricates. *Trans. R. Soc. S. Aust.* 63 (2): 180 - 199, pl. 7.

GRAY, J.E., 1847 Additional Observations on Chitones, *Proc. Zool. Soc. Lond.* 15: 126-127.

International Code of Zoological Nomenclature, 1964, London.

IREDALE, T. & W.L. MAY, 1916 Misnamed Tasmanian Chitons. *Proc. Malac. Soc. Lond.* 12: 94 - 117, pls. 4 - 5.

SHUTTLEWORTH, R.J., 1853 Diagnosen neuer Mollusken. *Mitth. Naturf. Ges. Bern:* 168-216.

SMITH, A.G., 1960. Amphineura: I 41 - I 76. In Moore R.C., *Treatise on Invertebrate Paleontology*, I (1). Geol. Soc. America & Univ. Kansas Press.

TORR, W.G., 1912 On a new Tasmanian Chiton. Pap. *Proc. R. Soc. Tasm.* : 1 - 2, pl. 1.